

he Houston firm would
k with Minneapolis archi-
firms hired for specific
ects in the plan.

he Houston architects
ild receive 1 per cent or
er cent of a project's cost,
ending on the amount of
k the firm does. The
rd wants the total amount
architect fees to stay
in 6 per cent. The local
itect would receive the
nce of the fee.

ot all board members
e as to how much the
ston firm should do.
e favor a very limited
tract while others want a
espread contract.

chool sources have indi-
d the fee may run be-
n \$170,000 and \$270,000
the Houston firm.

ne other firm, Perkins
Will, Chicago, Ill., has
a competing with the
ston firm. Board mem-
have met with represen-
ves of both.

he board has also dis-
sed proposed contracts
a T. G. Evensen & Asso-
es, bond consultants, for
000, and with Dorsey,
en, Marquart, Windhorst
West, a law firm, for
000.

ome board members feel
proposed contracts are
high. Evensen would do
work in selling bonds for
\$28 million program and
ey, Owen would write a
l opinion backing up the
ds.

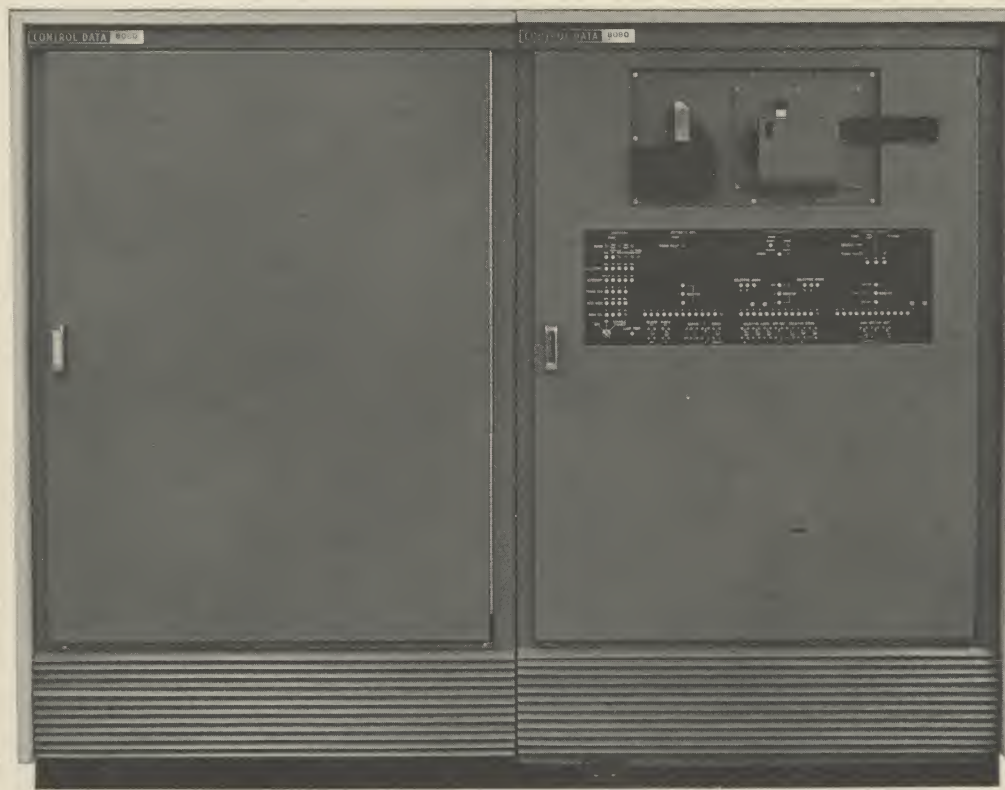
Court Order ought to Block ilroad Action

ASHINGTON, D.C. —
— The rail firemen's
n filed suit in U.S. dis-
court here Friday to en-
the railroads from apply-
disputed areas of a fed-
arbitration award involv-
elimination of thousands
firemen's jobs.

he Locomotive Firemen
Enginemen's Union
ed for an injunction to
ect members from "unil-
ral action" by the cars.

he union asked for the
rainer until the arbitra-
board rules on disputed
rpretations of the arbi-
on award.

ttorneys for the union
answered a restraining
r granted the railroads



CONTROL DATA® 8080 COMPUTER-CONTROLLED TYPESETTING SYSTEM

major tests in the City Coun-
cil.

Some persons argue the
ordinance is so restrictive it
is choking the city's growth.
Their opponents warn an ef-
fort is being made to take
the backbone out of the ordi-
nance's standards and safe-
guards.

The ordinance limits the
size of a building to be con-
structed by the area of the
lot and the number of park-
ing places that can be pro-
vided. It also requires that
the building be set back a
certain distance from the lot
line.

But to provide some flexi-
bility it allows "variances"
from the official standards.

An owner can seek a vari-
ance if there is some hard-
ship he did not cause, such
as poor soil or an odd-shaped
lot.

But the variance cannot be
based "exclusively upon a
desire to increase the value
or income potential of the
parcel of land," the ordi-

denial because Phelps did not
show a hardship.

"The hardship is that there
isn't additional land avail-
able," said Alderman H. P.
(Red) Christensen.

"There has to be a degree
of reasonableness. You have
made the land use so restric-
tive there are \$24 million in
buildings you aren't going to

The earlier-than-usual open-

"You want to destroy all
the guidelines the planning
department has been using
just to put up a larger build-
ing so someone can make a
bigger profit," said Alderman
Gerald Nelson.

Both requests are sched-
uled to come up again May
26.

ENTIRELY AUTOMATIC TYPESETTING... 10,000 LINES PER HOUR... INCLUDING DISPLAY ADVERTISING

A firm of architects from
Houston, Tex., is expected to
be hired by the Minneapolis
School Board as consultants
for a portion of the board's
\$28 million school building
plan.

The board may act as early
as next Tuesday to negotiate
a contract with the firm,
Caudill, Rowlett and Scott.

a number of other matters.

The Houston firm would
work with Minneapolis archi-
tect firms hired for specific
projects in the plan.

The Houston architects
would receive 1 per cent or
2 per cent of a project's cost,
depending on the amount of
work the firm does. The
board wants the total amount
of architect fees to stay

apolis Friday.
Barbash, head of the
consin University's econo-
department, was one of
speakers at the sixteenth
annual University of Min-
nesota industrial relations
ference.

British Troops Win Key Point South of Yenn

"The labor movement
made up of humans, not
bunch of gods. The la-
movement is a business,
a religion and there
crooks in this business
as there are in any o-
business."

Barbash was suppose
debate Robert Hess, ex-
utive vice president of
Minnesota Federation
Labor, on shortcomings
the labor movement. As i-
veloped, Barbash defe-
labor and Hess, to some-
tent, discussed its short-
ings.

Hess said that during
childhood kids looked u-
such stalwart union pe-
as railroadmen and mail-
riers. Now, Hess said,
not entirely a joke that u-
people such as school te-
achers have a tendency to
ceal their means of l-
hood.

Higher Pay

Hess said, however,
you can determine which
of industry is union or-
ized and which is not or-
ized by the pay classifi-
cations. Packing house w-
ers who are organized
instance, get two to
times as much pay as
try workers who are la-
unorganized, Hess said.

The conference was
cluding today with pres-
tions by Ray Solem,
power co-ordinator of
Minnesota State De-
ment of Employment S-
rity; Carl Winn, AFL
regional director, St.
Jack Flagler, Universit-
Minnesota labor depart-
director, and Edward P.
gan, television news
mentator and columnist.

China Trade U- Quarter Billio

LONDON, England
(UPI) — Communist Ch-
trade with the non-Com-
unist world increased by

**CONTROL DATA® 8080 SYSTEM
VERSATILITY ASSURES MAXIMUM
PRODUCTIVITY AND ECONOMY
FOR YOUR NEWSPAPER NEEDS**

Computer Systems are widely used in the newspaper business. The industry uses them for general ledger, credit/collection, circulation and payroll accounting as well as advertising billing, cost analysis and scheduling, etc.

Now, computers have been applied to the automation of newspaper typesetting.

The CONTROL DATA 8080 Computer-Controlled Typesetting System has introduced a major extension in automatic typesetting, offering two outstanding advantages not previously available in publishing:

- **THE STANDARD 8080 SYSTEM CAN HANDLE HOT-LEAD DISPLAY ADVERTISING TYPE.**
- **THE EXPANDED 8080 SYSTEM REQUIRES NO OPERATOR INTERVENTION FROM THE TIME AN UNJUSTIFIED PAPER TAPE IS READ INTO A READER UNTIL TYPE HAS BEEN PRODUCED BY A LINECASTING MACHINE.**

In addition, the computer used in this system is a general-purpose computer that can be adapted to other uses when not in use for typesetting. Peripheral equipment requires no extensive modification for use with standard torn-tape system equipment. Standard "off-the-shelf" equipment can be used to upgrade the basic system for special typesetting assignments such as API/UPI wire stories and classified ads.

This combination of capabilities offers maximum service, performance and economy in a system designed and manufactured to meet the specific requirements of your individual operation.

HOW THE 8080 SYSTEM OPERATES

The CONTROL DATA 8080 System is a versatile fully programmed computer package capable of utilizing any Control Data general-purpose computer with the equivalent of 8,000 12-bit words of core Basic System storage.

A Basic System uses the CONTROL DATA 8090 Computer with a CONTROL DATA 351 Copy Reader and a 352 Typesetter Punch. The latter two pieces of equipment are designed for use with advanced sprocket paper tape used by most typesetting equipment in general use today.

The Expanded System includes the 8090 Computer and a 351 Copy Reader with each

typewriter. Memory storage capacity is increased to 16,000 words in the computer and 65,000 words in an extra memory storage unit. Up to twelve typewriter-reader combinations may be used with up to 16 "punch stations" operating directly to line-casting machines.

JUSTIFICATION/HYPHENATION

Special justification/hyphenation programming, designed for use with Control Data equipment, is applicable to both newspaper and magazine typesetting. It allows the computer to receive unjustified, unhyphenated tape and produce, at unprecedented speed, a tape which is correctly hyphenated and justified, with spacing whose regularity eliminates linecaster jamming. As a result, typesetting is continuous as well as automatic.

This programming combines advantageous elements of all programs previously used, and is capable of achieving greater than 95% accuracy, an estimated 67% greater productivity, and 40% less time spent perforating tape.

Additional savings in labor can be realized, since less-skilled computer-typists can be employed instead of perforator operators trained in manual justification. Costs of teaching manual justification and hyphenation can be eliminated. Monitor and machinist time now spent correcting linecaster bottlenecks, due to operator-caused tight and loose lines, can be eliminated.

OVERALL BENEFITS

Each installation has its own inherent benefits due to the fact that each newspaper or magazine has requirements specific to its own operation. The CONTROL DATA 8080 System was designed to be adaptable to these individual needs, both in equipment required to do the job and in programming necessary to achieve maximum efficiency and economy of operation.

A visit with your nearest Control Data representative will give you some idea of what we mean. He can show you the variety of applications now in use and explain how these field-proven techniques can be successfully applied to your operation, with minimum modification of your present setup. In addition, he can review the newest advances in typesetting automation. For example, the way that communication links can be used to handle typesetting for newspaper "chains". And, he will be able to help you make maximum use of the system for auxiliary jobs.

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8080 SYSTEM ADAPTABILITY:

- **ACCOMMODATES A WIDE RANGE OF TYPE FACES, STYLES**
- **CAN PROVIDE AUTOMATIC, CONTINUOUS PROCESS**
- **HANDLES JUSTIFICATION/HYPHENATION**
- **CAN BE USED FOR DISPLAY AND CLASSIFIED ADVERTISING**
- **ADAPTABLE TO AUXILIARY USES (SCHEDULING, ACCOUNTING, ETC.)**
- **KEEPS RECORD OF PRODUCTION**

The 8080 System has the capability to set hot-lead display advertising in the same continuous automatic method used for straight copy.



Due to speed and flexibility, many auxiliary jobs such as accounting and scheduling can utilize the CONTROL DATA 8080 System.



Standard advanced sprocket paper tape is produced by the CONTROL DATA 352 Typesetter Punch to drive linecasting machines.



The heart of the 8080 Typesetting System is the general-purpose, solid-state 8090 Computer.



CONTROL DATA 352 Typesetter Punch produces paper tape to be read directly into linecasting machines.



351 Copy Reader reads unjustified, hyphenated paper tape at 350 characters per second into the 8090 Computer.



BATTERY OF TYPISTS
PRODUCING UNJUSTIFIED
PAPER TAPE

FIGURE 1. BASIC 8080 TYPESETTING SYSTEM

LINECASTING
MACHINES
EQUIPPED TO READ
PAPER TAPE

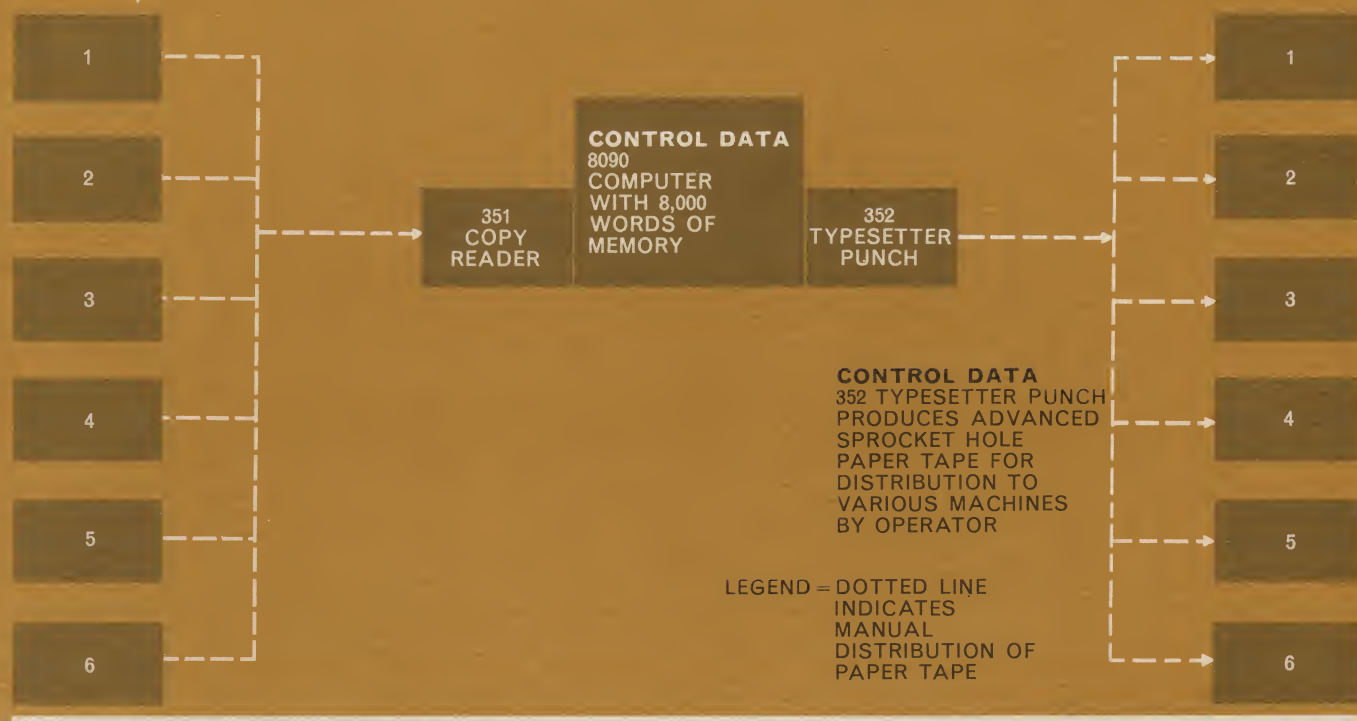
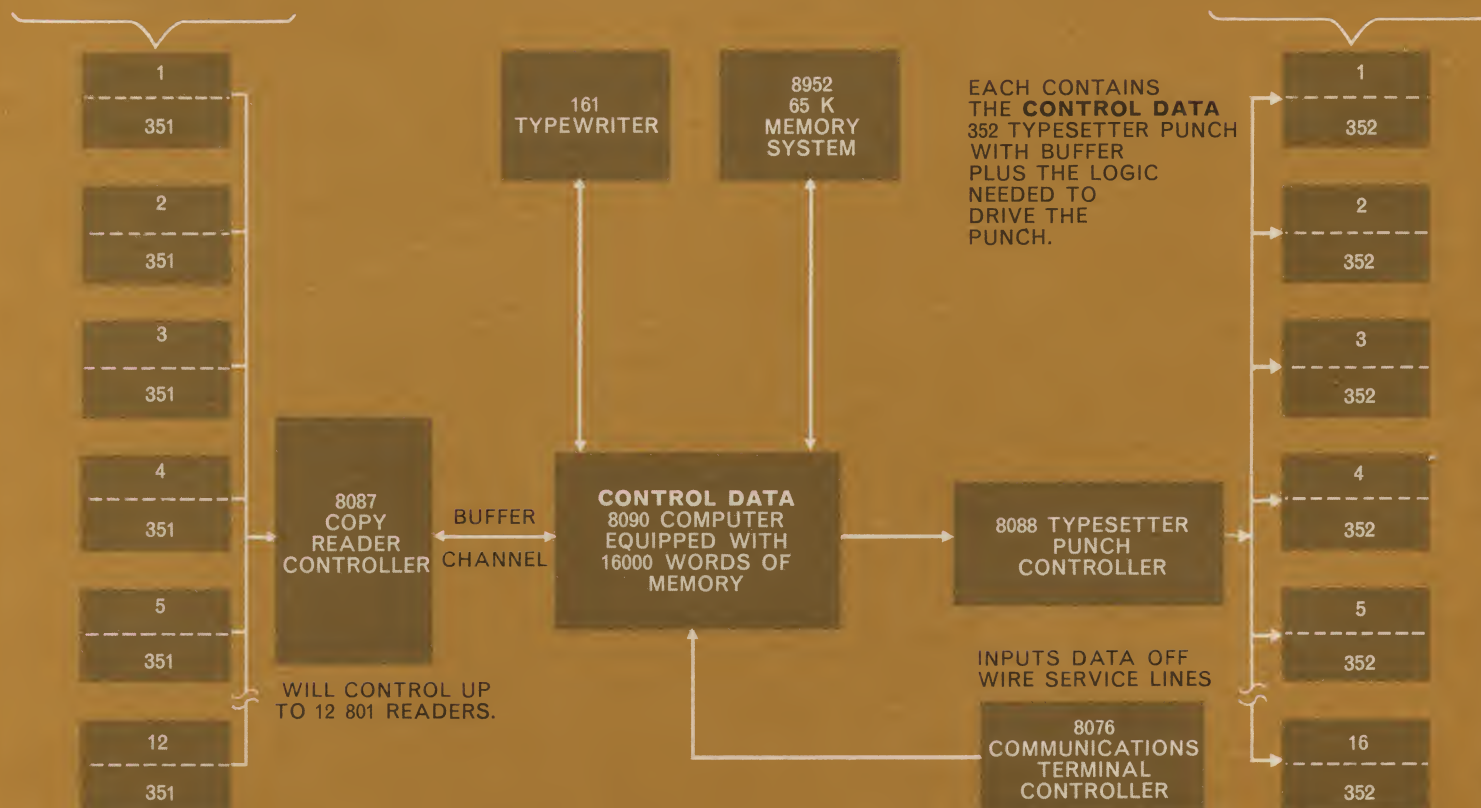


FIGURE 2. EXPANDED 8080 TYPESETTING SYSTEM

BATTERY OF TYPISTS
PRODUCING
UNJUSTIFIED
PAPER TAPE.
A **CONTROL DATA** 351
IS AT EACH
PERFORATOR.

BATTERY OF UP TO
16 PUNCH STATIONS.



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ALAMOGORDO • ALBUQUERQUE • ATLANTA • BOSTON • CAPE CANAVERAL
CHICAGO • CINCINNATI • CLEVELAND • COLORADO SPRINGS • DALLAS • DAYTON
DENVER • DETROIT • DOWNEY, CALIF. • HONOLULU • HOUSTON • HUNTSVILLE
ITHACA • KANSAS CITY, KAN. • LOS ANGELES • MINNEAPOLIS • NEWARK
NEW ORLEANS • NEW YORK CITY • OAKLAND • OMAHA • PALO ALTO
PHILADELPHIA • PHOENIX • PITTSBURGH • SACRAMENTO • SALT LAKE CITY
SAN BERNARDINO • SAN DIEGO • SEATTLE • WASHINGTON, D.C.

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CANBERRA, AUSTRALIA • ATHENS, GREECE • LONDON, ENGLAND • OSLO, NORWAY
PARIS, FRANCE • STOCKHOLM, SWEDEN • MEXICO CITY, MEXICO, (REGAL
ELECTRONICA DE MEXICO, S.A.) • OTTAWA, CANADA, (COMPUTING DEVICES OF
CANADA, LIMITED) • TOKYO, JAPAN, (C. ITOH ELECTRONIC COMPUTING
SERVICE CO., LTD.)

CONTROL DATA
CORPORATION

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